

Claims:

1. A pigment composition comprising (1) an organic pigment and (2) a combination of at least one anionic and at least one cationic coloured compound wherein the combination (2) comprises
 - (a) at least one anionic and at least one cationic dye, each of a chemical structure differing from that of the organic pigment (1),
 - (b) at least one anionic and at least one cationic pigment derivative, the chemical structure of at least one of which is not derived from said organic pigment (1), or
 - (c) mixtures of (a) and (b).
2. The pigment composition according to claim 1 wherein the organic pigment is a monoazo, disazo, naphthol, dioxazone, azomethin, azocondensation, metal complex, nitro, perinone, quinoline, anthraquinone, benzimidozolone, isoindoline, isoindolinone, quinacridone, hydroxyanthraquinone, aminoanthraquinone, anthrapyrimidine, indanthrone, flavanthrone, pyranthrone, anthantrone, isoviolanthrone, diketopyrrolopyrrole, carbazole, perylene, indigo or thioindigo pigment.
3. The pigment composition according to claim 2 wherein the organic pigment is a mono- or disazo pigment, preferably a mono- or diarylide, a metal complex, preferably a copper phthalocyanine pigment, an indanthrone or a quinacridone.
4. The pigment composition according to claim 2 wherein the organic pigment is a mono- or disazo pigment, preferably a mono- or diarylide, or a metal complex, preferably a copper phthalocyanine pigment.
5. A pigment composition according to claim 2 wherein the organic pigment is a naphthol pigment, preferably a β -naphthol or a β -oxynaphthoic acid (BONA) pigment.
6. The pigment composition according to claim 4 wherein the organic pigment is a mono- or diarylide yellow pigment selected from C.I. Pigment Yellow 1, 2, 10, 12, 13, 14, 17, 61, 62, 63, 64, 65, 73, 74, 75, 83, 127, 168, 174, 176, 188 and 191.

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7. The pigment composition according to claim 4 wherein the organic pigment is a disazo orange pigment selected from C.I. Pigment Orange 16 and C.I. Pigment Orange 34.
8. The pigment composition according to claim 3 wherein the organic pigment is a naphthol red pigment selected from C.I. Pigment Red 48:1, C.I. Pigment Red 48:2, C.I. Pigment Red 48:3, C.I. Pigment Red 48:4, C.I. Pigment Red 48:5, C.I. Pigment Red 49:1, C.I. Pigment Red 52:1, C.I. Pigment Red 52:2, C.I. Pigment Red 52:3, C.I. Pigment Red 53:1, C.I. Pigment Red 53:2, C.I. Pigment Red 53:3, C.I. Pigment Red 57:1, C.I. Pigment Red 57:2, C.I. Pigment Red 58:2, C.I. Pigment Red 58:4, C.I. Pigment Red 63:1 and C.I. Pigment Red 64:1, or a quinacridone red pigment being C.I. Pigment Red 202.
9. The pigment composition according to claim 5 wherein the organic pigment is a naphthol red pigment selected from C.I. Pigment Red 48:1, C.I. Pigment Red 48:2, C.I. Pigment Red 48:3, C.I. Pigment Red 48:4, C.I. Pigment Red 48:5, C.I. Pigment Red 49:1, C.I. Pigment Red 52:1, C.I. Pigment Red 52:2, C.I. Pigment Red 52:3, C.I. Pigment Red 53:1, C.I. Pigment Red 53:2, C.I. Pigment Red 53:3, C.I. Pigment Red 57:1, C.I. Pigment Red 57:2, C.I. Pigment Red 58:2, C.I. Pigment Red 58:4, C.I. Pigment Red 63:1 and C.I. Pigment Red 64:1.
10. The pigment composition according to claim 3 wherein the organic pigment is a blue or green copper phthalocyanine pigment selected from C.I. Pigment Blue 15:1, C.I. Pigment Blue 15:2, C.I. Pigment Blue 15:3, C.I. Pigment Blue 15:4, C.I. Pigment Green 7 and C.I. Pigment Green 36, or an indanthrone blue pigment being C.I. Pigment Blue 60.
11. The pigment composition according to claim 4 wherein the organic pigment is a blue or green copper phthalocyanine pigment selected from C.I. Pigment Blue 15:3, C.I. Pigment Blue 15:4, C.I. Pigment Green 7 and C.I. Pigment Green 36.
12. The pigment composition according to claim 1 wherein the anionic dye is selected from acid dyes, direct dyes, reactive dyes and mordant dyes.
13. The pigment composition according to claim 1 wherein the anionic dye is an organic pigment derivative containing one or more acidic groups.

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14. The pigment composition according to claim 12 wherein the anionic dye is an acid dye selected from C.I Acid Black 1, 24 and 48, C.I.Acid Blue 1, 7, 9, 25, 29, 40, 45, 74, 80, 83, 90, 92, 113, 120, 129 and 147, C.I. Acid Green 1, 3, 5, 25, 27, and 50, C.I. Acid Orange 6, 7, 8, 10, 12, 51, 52, 63 and 74, C.I. Acid Red 1, 4, 8, 14, 17, 18, 26, 27, 29, 37, 44, 50, 51, 52, 66, 73, 88, 97, 103, 114, 150, 151 and 183, C.I. Acid Violet 7 and 17, and C.I. Acid Yellow 1, 9, 11, 17, 23, 25, 29, 34, 36, 42, 54, 76, 99 and 169.
15. The pigment composition according to claim 12 wherein the anionic dye is a direct dye selected from C.I. Direct Blue 1, 14, 53 and 71, C.I. Direct Violet 51, C.I. Direct Red 2, 23, 28, 75, 80 and 81, and C.I. Direct Yellow 4, 8, 9, 12, 27, 50, 62 and 172.
16. The pigment composition according to claim 12 wherein the anionic dye is a reactive dye selected from C.I. Reactive Black 5, C.I. Reactive Blue 2, 4 and 15, C.I. Reactive Orange 16, C.I. Reactive Red 2 and 4, and C.I. Reactive Yellow 2.
17. The pigment composition according to claim 12 wherein the anionic dye is a mordant dye selected from C.I. Mordant Black 17 and C.I. Mordant Violet 5.
18. The pigment composition according to claim 1 wherein the cationic dye is an azo, azomethin, methin, polymethin, azine, cyanine, oxazine, thiazine, thiazole, acridine, anthraquinone, triarylmethan, xanthene or ketone imine dye.
19. The pigment composition according to claim 1 wherein the cationic dye is an organic pigment derivative containing one or more basic groups.
20. The pigment composition according to claim 18 wherein the cationic dye is a black dye selected from C.I. Basic Black 2 and C.I. Basic Black 7, a blue dye selected from C.I. Basic Blue 1, 3, 6, 7, 9, 11, 12, 16, 17, 24, 26, 40, 41, 57, 66, 80, 123 and 159, a green dye selected from C.I. Basic Green 1, 4 and 5, an orange dye selected from C.I. Basic Orange 2, 14, 21 and 54, a red dye selected from C.I. Basic Red 1, 2, 5, 9, 10, 13, 22, 29, 46 and 54, a violet dye selected from C.I. Basic Violet 1, 2, 3, 4, 10 and 35, or

a yellow dye selected from C.I. Basic Yellow 1, 2, 11, 13, 17, 19, 21, 24, 28, 40, 45, 53, 61, 63 and 73.

21. The pigment composition according to claim 1 wherein combination (2b) comprises an anionic pigment derivative and a cationic pigment derivative, one of said derivatives being not derived from organic pigment (1).

22. The pigment composition according to claim 1 wherein combination (2) comprises the pairs of

cationic dye + anionic dye (2a),

cationic pigment derivative + anionic dye (2c),

cationic dye + anionic pigment derivative (2c), or

cationic pigment derivative + anionic pigment derivative (2b) (the two pigment derivatives must be structurally different).

23. The pigment composition according to claim 1 comprising a partial replacement of the anionic and cationic coloured compounds with anionic and cationic surfactants, respectively.

24. The pigment composition according to claim 25 wherein combination (2) comprises the components of

cationic dye/cationic surfactant + anionic dye,

anionic dye/anionic surfactant + cationic dye,

cationic dye/cationic surfactant + anionic pigment derivative,

anionic dye/anionic surfactant + cationic pigment derivative,

cationic pigment derivative/ cationic surfactant + anionic dye,

anionic pigment derivative/ anionic surfactant + cationic dye,

cationic pigment derivative/ cationic surfactant + anionic pigment derivative (the two pigment derivatives must be structurally different), or

anionic pigment derivative/anionic surfactant + cationic pigment derivative (the two pigment derivatives must be structurally different).

25. The pigment composition according to claim 1 comprising from 50.1 to 99.8% by weight (b.w.), preferably from 80.0 to 99.0% (b.w.) of the organic pigment (1), from 0.1 to 49.8% (b.w.), preferably from 0.5 to 10.0% (b.w.) of at least one anionic coloured compound, and

from 0.1 to 49.8% (b.w.), preferably from 0.5 to 10% (b.w.) of at least one cationic coloured compound.

26. The pigment composition according to claim 27 containing further additives.

27. The pigment composition according to any one of claims 1 to 26 which is a liquid (aqueous) composition, preferably a pigment dispersion, of organic pigment (1) and said anionic and cationic coloured compounds.

28. The pigment composition according to any one of claims 1 to 26 which is a solid composition, preferably a pigment powder or pigment granules, of organic pigment (1) and said anionic and cationic coloured compounds.

29. Method for preparing the liquid (aqueous) pigment composition according to claim 27 comprising

adding said anionic and cationic coloured compounds to the organic pigment (1) during its

synthesis, conditioning or surface treatment, or

adding said anionic and cationic coloured compounds separately, as aqueous composition or in dry form, to the organic pigment (1) which is in form of a slurry, or

adding a separately prepared and isolated complex of said anionic and cationic coloured

compounds to the organic pigment (1) which is in form of an aqueous slurry or organic solvent preparation.

30. Method according to claim 29 wherein the separately prepared and isolated complex of said anionic and cationic coloured compounds is in the form of a presscake which is redispersed and added to the organic pigment (1) which is in form of a slurry.

31. Method for preparing the solid pigment composition according to claim 28 comprising dispersing either the organic pigment (1) in aqueous solutions of said anionic and cationic coloured compounds, or dispersing said anionic and cationic coloured compounds in dispersions (slurries) of organic pigment (1), optionally cooling the dispersions, filtering and washing them until salt free, and then drying and/or granulating the obtained presscakes.

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32. Method for preparing the solid pigment composition according to claim 28 comprising co-flushing or co-drying a filter cake or dispersion (slurry) of organic pigment (1) and a filter cake or disperion (slurry) of the separately prepared and isolated complex of said anionic and cationic coloured compounds.
33. Method of preparing the solid pigment composition according to claim 28 comprising mixing the dry organic pigment (1) with the dry complex of said anionic and cationic coloured compounds.
34. Method of preparing the liquid (aqueous) or solid pigment compositions according to any one of claims 29 to 33 wherein the said anionic and cationic coloured compounds and their complexes are surface treated (coated).
35. A non-aqueous printing ink composition or paint system comprising the pigment composition according to claim 1.
36. A method for preparing a non-aqueous printing ink composition or paint system according to claim 35 comprising adding said pigment compositions to a conventional printing ink formulation or paint system.
37. Use of the non-aqueous printing ink compositions or paint systems according to claim 35 in printing and painting procedures.